The aim of this study was to evaluate the effectiveness and safety of catheter repair in our cohort of intestinal failure patients” Wouters et al (2018).

Abstract:

BACKGROUND & AIMS: Repeated central venous catheter loss due to complications, including material breakage, compromises the options to obtain adequate vascular access in home parenteral nutrition (HPN) patients. It remains unclear whether repair of damaged catheters is an effective strategy to extend catheter survival, avoid surgical replacement and maintain venous access. The aim of this study was to evaluate the effectiveness and safety of catheter repair in our cohort of intestinal failure patients.

METHODS: We conducted a retrospective analysis of all catheter repairs that were performed between 2006 and 2017 at our tertiary referral centre for intestinal failure. Primary outcome was the additional median catheter survival after catheter repair, as calculated with Kaplan-Meier analyses. Secondary outcomes included risk for central line-associated bloodstream infections (CLABSIs) and risk factors for catheter damage, as calculated with Poisson regression analyses. CLABSI rates in post-repair periods were compared with pre-repair periods. Pre- and post-repair periods were either short-term (30 days), or long-term (whole catheter period).

RESULTS: A total of 58 repairs in 41 catheters of 35 HPN patients were included in the
Repair of damaged central venous catheters is safe and doubles catheter survival | 2

analysis. The median time to first repair was 452 days (interquartile range (IQR) 206-1134). After first repair, catheter survival additionally increased by 510 days (IQR 147-1195). Repairs did not increase the short-term risk for CLABSIs: incidence rates were 1.23 and 1.26 CLABSIs/1000 catheter days for the 30 days pre- and post-repair periods, respectively (rate ratio, 1.05; 95%CI, 0.15-7.44; P = 0.96). For the whole pre- and post-repair catheter period, incidence rates were 0.12 and 0.59 CLABSIs/1000 catheter days, respectively (rate ratio, 3.55; 95%CI, 1.10-11.45; P = 0.03). The overall CLABSI incidence rates in undamaged versus repaired catheters were 0.84 and 0.31 CLABSIs/1000 catheter days, respectively (rate ratio, 0.47; 95%CI, 0.23-0.94; P = 0.03). A lower age at catheter start and femoral catheterization were associated with a higher risk for catheter damage.

CONCLUSIONS: Repair of damaged catheters is often successful and an effective strategy to prolong and maintain venous access in HPN patients. On the short-term, no increase in CLABSI incidence was observed. Despite a possible increase in CLABSI incidence on the long-term, overall CLABSI rates of repaired catheters remained well below the overall CLABSI incidence of undamaged catheters. The identification of two risk factors for catheter damage may help to prevent future catheter damage.

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